NEUROPHARMACOLOGY

CONTENTS OF VOLUME 44

NUMBER 1

Review **F. Lesage**	Pharmacology of neuronal background potassium channels	1
P. Gubellini, E. Saulle, D. Centonze, C. Costa, D. Tropepi, G. Bernardi, F. Conquet, P. Calabresi	Corticostriatal LTP requires combined mGluR1 and mGluR5 activation	8
D. Manahan-Vaughan, R.T. Ngomba, M. Storto, A. Kulla, M.V. Catania, S. Chiechio, L. Rampello, F. Passarelli, A. Capece, K.G. Reymann, F. Nicoletti	An increased expression of the mGlu5 receptor protein following LTP induction at the perforant path–dentate gyrus synapse in freely moving rats	17
N. del Olmo, A. Handler, L. Alvarez, J. Bustamante, R. Martín del Río, J.M. Solís	Taurine-induced synaptic potentiation and the late phase of long-term potentiation are related mechanistically	26
P.V. Massey, E.C. Warburton, D. Wynick, M.W. Brown, Z.I. Bashir	Galanin regulates spatial memory but not visual recognition memory or synaptic plasticity in perirhinal cortex	40
G. Puia, J.-M. Mienville, K. Matsumoto, H. Takahata, H. Watanabe, E. Costa, A. Guidotti	On the putative physiological role of allopregnanolone on $GABA_A$ receptor function	49
M.J. Wall	Competitive $GABA_A$ receptor antagonists increase the proportion of functional high-affinity $\alpha 6$ subunit-containing receptors in granule cells of adult rat cerebellum	56
I.R. Mellor, T.J. Brier, F. Pluteanu, K. Strømgaard, A. Saghyan, N. Eldursi, M.J. Brierley, K. Andersen, J.W. Jaroszewski, P. Krogsgaard-Larsen, P.N.R. Usherwood	Modification of the philanthotoxin-343 polyamine moiety results in different structure-activity profiles at muscle nicotinic ACh, NMDA and AMPA receptors	70
H. Ikeda, G. Akiyama, Y. Fujii, R. Minowa, N. Koshikawa, A.R. Cools	Role of AMPA and NMDA receptors in the nucleus accumbens shell in turning behaviour of rats: interaction with dopamine receptors	81
K. Rasmussen, J. Vandergriff	The selective iGluR1-4 (AMPA) antagonist LY300168 attenuates morphine-withdrawal-induced activation of locus coeruleus neurons and behavioural signs of morphine withdrawal	88
M. Elena Castro, A. Diaz, E. del Olmo, A. Pazos	Chronic fluoxetine induces opposite changes in G protein coupling at pre and postsynaptic $5\text{-}HT_{1A}$ receptors in rat brain	93
T.E. Koeltzow, J.D. Austin, P. Vezina	Behavioral sensitization to quinpirole is not associated with increased nucleus accumbens dopamine overflow	102
R. Ortiz-Butron, J. Pacheco-Rosado, A. Hernández-Garcia, M. Briones-Velasco, L. Rocha	Mild thyroid hormones deficiency modifies benzodiazepine and mu-opioid receptor binding in rats	111
C. Severini, M.T. Ciotti, D. Mercanti, C. Barbato, P. Calissano	A tachykinin-like factor increases glutamate toxicity in rat cerebellar granule cells	117
I. Langer, P. Vertongen, J. Perret, M. Waelbroeck, P. Robberecht	Lysine 195 and aspartate 196 in the first extracellular loop of the $VPAC_1$ receptor are essential for high affinity binding of agonists but not of antagonists	125
R. Giniatullin, E. Sokolova, A. Nistri	Modulation of $P2X_3$ receptors by Mg^{2+} on rat DRG neurons in culture	132
K. Della Penna, F. Kinose, H. Sun, K.S. Koblan, H. Wang	Tuberoinfundibular peptide of 39 residues (TIP39): molecular structure and activity for parathyroid hormone 2 receptor	141
	Erratum	155

NUMBER 2

R. Stoop, F. Conquet, E. Pralong	Determination of group I metabotropic glutamate receptor subtypes involved in the frequency of epileptiform activity in vitro using mGluR1 and mGluR5 mutant mice	157
T.-B. Lin	Dynamic pelvic-pudendal reflex plasticity mediated by glutamate in anesthetized rats	163
J.-M. Servitja, R. Masgrau, R. Pardo, E. Sarri, C. von Eichel-Streiber, J.S. Gutkind, F. Picatoste	Metabotropic glutamate receptors activate phospholipase D in astrocytes through a protein kinase C-dependent and Rho-independent pathway	171

M. Farrant, S.G. Brickley	Properties of $GABA_A$ receptor-mediated transmission at newly formed Golgi-granule cell synapses in the cerebellum	181
D.S. Reynolds, G.F. O'Meara, R.J. Newman, F.A. Bromidge, J.R. Atack, P.J. Whiting, T.W. Rosahl, G.R. Dawson	$GABA_A$ α1 subunit knock-out mice do not show a hyperlocomotor response following amphetamine or cocaine treatment	190
N. Enginar, P. Yamantürk, A. Nurten, R. Nurten, H. Koyuncuoğlu	Scopolamine-induced convulsions in fasted mice after food intake: determination of blood glucose levels, [^{3}H]glutamate binding kinetics and antidopaminergic drug effects	199
T. Yoshitake, S. Yoshitake, M. Yamaguchi, S.O. Ögren, J. Kehr	Activation of $5\text{-}HT_{1A}$ autoreceptors enhances the inhibitory effect of galanin on hippocampal 5-HT release in vivo	206
A. Stewart, P.A. Davies, E.F. Kirkness, P. Safa, T.G. Hales	Introduction of the $5\text{-}HT_{3B}$ subunit alters the functional properties of $5\text{-}HT_3$ receptors native to neuroblastoma cells	214
S.L. Verbois, S.W. Scheff, J.R. Pauly	Chronic nicotine treatment attenuates α7 nicotinic receptor deficits following traumatic brain injury	224
C.D. McColl, M.K. Horne, D.I. Finkelstein, J.Y.F. Wong, S.F. Berkovic, J. Drago	Electroencephalographic characterisation of pentylenetetrazole-induced seizures in mice lacking the α4 subunit of the neuronal nicotinic receptor	234
K.C. Ng, S.M. Moochhala, S. Md, E.L. Yap, S.Y. Low, J. Lu	Preservation of neurological functions by nitric oxide synthase inhibitors following hemorrhagic shock	244
J. Lu, S. Moochhala, M. Shirhan, K.C. Ng, A.L. Teo, M.H. Tan, X.L. Moore, M.C. Wong, E.A. Ling	Neuroprotection by aminoguanidine after lateral fluid-percussive brain injury in rats: a combined magnetic resonance imaging, histopathologic and functional study	253
K.V. Allen, I.S. McGregor, G.E. Hunt, M.E. Singh, P.E. Mallet	Regional differences in naloxone modulation of Δ^9-THC induced Fos expression in rat brain	264
L. Yang, C. Long, M.E. Randall, C.L. Faingold	Neurons in the periaqueductal gray are critically involved in the neuronal network for audiogenic seizures during ethanol withdrawal	275
A.P. Silva, A.P. Carvalho, C.M. Carvalho, J.O. Malva	Functional interaction between neuropeptide Y receptors and modulation of calcium channels in the rat hippocampus	282

NUMBER 3

S.R. Cobb, P.M. Larkman, D.O. Bulters, L. Oliver, C.H. Gill, C.H. Davies	Activation of I_h is necessary for patterning of mGluR and mAChR induced network activity in the hippocampal CA3 region	293
K.V.S. Nemmani, J.S. Mogil	Serotonin–GABA interactions in the modulation of mu- and kappa-opioid analgesia	304
R. Gómez-Villafuertes, J. Pintor, J. Gualix, M.T. Miras-Portugal	$GABA_B$ receptor-mediated presynaptic potentiation of ATP ionotropic receptors in rat midbrain synaptosomes	311
G.A. Higgins, T.M. Ballard, J. Huwyler, J.A. Kemp, R. Gill	Evaluation of the NR2B-selective NMDA receptor antagonist Ro 63-1908 on rodent behaviour: evidence for an involvement of NR2B NMDA receptors in response inhibition	324
M.J. Bubar, L.R. McMahon, P. De Deurwaerdère, U. Spampinato, K.A. Cunningham	Selective serotonin reuptake inhibitors enhance cocaine-induced locomotor activity and dopamine release in the nucleus accumbens	342
C. Fabre-Nys, D. Chesneau, C. De La Riva, M.R. Hinton, A. Locatelli, S. Ohkura, K.M. Kendrick	Biphasic role of dopamine on female sexual behaviour via D2 receptors in the mediobasal hypothalamus	354
S.A. Tucci, R.F. Genn, S.E. File	Methyllycaconitine (MLA) blocks the nicotine evoked anxiogenic effect and 5-HT release in the dorsal hippocampus: possible role of α7 receptors	367
H.J. Murray, J.J. O'Connor	A role for COX-2 and p38 mitogen activated protein kinase in long-term depression in the rat dentate gyrus in vitro	374
J.J. Buccafusco, W.J. Jackson, J.D. Stone, A.V. Terry Jr.	Sex dimorphisms in the cognitive-enhancing action of the Alzheimer's drug donepezil in aged Rhesus monkeys	381
L. Raiteri, S. Giovedì, F. Benfenati, M. Raiteri, G. Bonanno	Cellular mechanisms of the acute increase of glutamate release induced by nerve growth factor in rat cerebral cortex	390
J.D. Clyne, T.C. Brown, R.I. Hume	Expression level dependent changes in the properties of $P2X_2$ receptors	403
G. Liu, V. Yarov-Yarovoy, M. Nobbs, J.J. Clare, T. Scheuer, W.A. Catterall	Differential interactions of lamotrigine and related drugs with transmembrane segment IVS6 of voltage-gated sodium channels	413

NUMBER 4

A.T. Hama	Acute activation of the spinal cord metabotropic glutamate subtype-5 receptor leads to cold hypersensitivity in the rat	423
P. Das, C.L. Bell-Horner, T.K. Machu, G.H. Dillon	The $GABA_A$ receptor antagonist picrotoxin inhibits 5-hydroxytryptamine type 3A receptors	431
E.J. Bull, P.H. Hutson, K.C.F. Fone	Reduced social interaction following 3,4-methylenedioxymethamphetamine is not associated with enhanced 5-HT_{2C} receptor responsivity	439
V. Sanchez, J. Camarero, E. O'Shea, A.R. Green, M.I. Colado	Differential effect of dietary selenium on the long-term neurotoxicity induced by MDMA in mice and rats	449
I. Ninan, K.E. Jardemark, R.Y. Wang	Olanzapine and clozapine but not haloperidol reverse subchronic phencyclidine-induced functional hyperactivity of N-methyl-D-aspartate receptors in pyramidal cells of the rat medial prefrontal cortex	462
S.B. Powell, M.P. Paulus, D.S. Hartman, T. Godel, M.A. Geyer	RO-10-5824 is a selective dopamine D4 receptor agonist that increases novel object exploration in C57 mice	473
M. Iglesias, M.F. Segura, J.X. Comella, G. Olmos	μ-opioid receptor activation prevents apoptosis following serum withdrawal in differentiated SH-SY5Y cells and cortical neurons via phosphatidylinositol 3-kinase	482
Z.L. Jiang, J.-H. Ye	Protein kinase C_ε is involved in ethanol potentiation of glycine-gated Cl^- current in rat neurons of ventral tegmental area	493
Y.E. Slater, L.M. Houlihan, P.D. Maskell, R. Exley, I. Bermúdez, R.J. Lukas, A.C. Valdivia, B.K. Cassels	Halogenated cytisine derivatives as agonists at human neuronal nicotinic acetylcholine receptor subtypes	503
N.M.J. Rupniak, J.K. Webb, A. Fisher, D. Smith, S. Boyce	The substance P (NK_1) receptor antagonist L-760735 inhibits fear conditioning in gerbils	516
M. Storr, D. Sattler, A. Hahn, V. Schusdziarra, H.D. Allescher	Endogenous CCK depresses contractile activity within the ascending myenteric reflex pathway of rat ileum	524
K. Mishima, F. Pu, T. Kaneko, N. Egashira, K. Iwasaki, M. Fujiwara	Post-ischemic administeration but not pre-ischemic administeration of N^G-nitro-L-arginine prevents spatial memory impairments and apoptosis by an inhibition of a delayed increase in NO_x^- in the hippocampus following repeated cerebral ischemia	533
K. Mishima, H. Tsukikawa, I. Miura, K. Inada, K. Abe, Y. Matsumoto, N. Egashira, K. Iwasaki, M. Fujiwara	Ameliorative effect of NC-1900, a new AVP_{4-9} analog, through vasopressin V_{1A} receptor on scopolamine-induced impairments of spatial memory in the eight-arm radial maze	541
	Corrigendum	553
	Erratum	554

NUMBER 5

S. Scaccianoce, F. Matrisciano, P. Del Bianco, A. Caricasole, V. Di Giorgi Gerevini, I. Cappuccio, D. Melchiorri, G. Battaglia, F. Nicoletti	Endogenous activation of group-II metabotropic glutamate receptors inhibits the hypothalamic–pituitary–adrenocortical axis	555
M.J. Bradbury, D.R. Giracello, D.F. Chapman, G. Holtz, H. Schaffhauser, S.P. Rao, M.A. Varney, J.J. Anderson	Metabotropic glutamate receptor 5 antagonist-induced stimulation of hypothalamic–pituitary–adrenal axis activity: interaction with serotonergic systems	562
J.-J. Lee, E.-T. Hahm, B.-I. Min, S.-H. Han, J.-J. Cho, Y.-W. Cho	Roles of protein kinase A and C in the opioid potentiation of the $GABA_A$ response in rat periaqueductal gray neuron	573
A.L. Mize, L.J. Young, R.H. Alper	Uncoupling of 5-HT_{1A} receptors in the brain by estrogens: regional variations in antagonism by ICI 182,780	584
C.P. Müller, R.J. Carey, J.B. Salloum, J.P. Huston	Serotonin$_{1A}$-receptor agonism attenuates the cocaine-induced increase in serotonin levels in the hippocampus and nucleus accumbens but potentiates hyperlocomotion: an in vivo microdialysis study	592
A. Dekeyne, L. Iob, M.J. Millan	Generalization of clozapine as compared to other antipsychotic agents to a discriminative stimulus elicited by the serotonin $(5\text{-}HT)_{2A}$ antagonist, MDL100,907	604
A. Harkin, T.J. Connor, M. Walsh, N. St John, J.P. Kelly	Serotonergic mediation of the antidepressant-like effects of nitric oxide synthase inhibitors	616
R.E. Myers, L.I. Anderson, D.E. Dluzen	Estrogen, but not testosterone, attenuates methamphetamine-evoked dopamine output from superfused striatal tissue of female and male mice	624
J.F. Cheer, D.A. Kendall, R. Mason, C.A. Marsden	Differential cannabinoid-induced electrophysiological effects in rat ventral tegmentum	633

A. Cormier, C. Morin, R. Zini, J.-P. Tillement, G. Lagrue	Nicotine protects rat brain mitochondria against experimental injuries	642
E.M. Jagoda, D.O. Kiesewetter, K. Shimoji, L. Ravasi, M. Yamada, J. Gomeza, J. Wess, W.C. Eckelman	Regional brain uptake of the muscarinic ligand, [^{18}F]FP-TZTP, is greatly decreased in M2 receptor knockout mice but not in M1, M3 and M4 receptor knockout mice	653
E. Deval, A. Baron, E. Lingueglia, H. Mazarguil, J.-M. Zajac, M. Lazdunski	Effects of neuropeptide SF and related peptides on acid sensing ion channel 3 and sensory neuron excitability	662
D. Cervia, P. Zizzari, B. Pavan, E. Schuepbach, D. Langenegger, D. Hoyer, C. Biondi, J. Epelbaum, P. Bagnoli	Biological activity of somatostatin receptors in GC rat tumour somatotrophs: evidence with sst_1–sst_5 receptor-selective nonpeptidyl agonists	672
S.J. Wang, T.S. Sihra	Opposing facilitatory and inhibitory modulation of glutamate release elicited by cAMP production in cerebrocortical nerve terminals (synaptosomes)	686

NUMBER 6

S.D. Sorensen, P.J. Conn	G protein-coupled receptor kinases regulate metabotropic glutamate receptor 5 function and expression	699
K.-H. Braunewell, M. Brackmann, D. Manahan-Vaughan	Group I mGlu receptors regulate the expression of the neuronal calcium sensor protein VILIP-1 in vitro and in vivo: implications for mGlu receptor-dependent hippocampal plasticity?	707
H.N. David, J.H. Abraini	Blockade of the locomotor stimulant effects of amphetamine by group I, group II, and group III metabotropic glutamate receptor ligands in the rat nucleus accumbens: possible interactions with dopamine receptors	717
K.M. Abel, M.P.G. Allin, D.R. Hemsley, M.A. Geyer	Low dose ketamine increases prepulse inhibition in healthy men	729
V. Jevtovic-Todorovic, A.P. Meyenburg, J.W. Olney, D.F. Wozniak	Anti-parkinsonian agents procyclidine and ethopropazine alleviate thermal hyperalgesia in neuropathic rats	739
M.M. Alcalá, N.M. Vivas, S. Hospital, P. Camps, D. Muñoz-Torrero, A. Badia	Characterisation of the anticholinesterase activity of two new tacrine–huperzine A hybrids	749
K.B.P. Fernandes, G.E. Crippa, R.F. Tavares, J. Antunes-Rodrigues, F.M.A. Corrêa	Mechanisms involved in the pressor response to noradrenaline injection into the cingulate cortex of unanesthetized rats	757
R. Tonini, E. Palma, R. Miledi, F. Eusebi	Properties of neuronal α7 mutant nicotinic acetylcholine receptors gated by bicuculline	765
B.B. Yao, C.W. Hutchins, T.L. Carr, S. Cassar, J.N. Masters, Y.L. Bennani, T.A. Esbenshade, A.A. Hancock	Molecular modeling and pharmacological analysis of species-related histamine H_3 receptor heterogeneity	773
J.K. Callaway, A.J. Lawrence, B. Jarrott	AM-36, a novel neuroprotective agent, profoundly reduces reactive oxygen species formation and dopamine release in the striatum of conscious rats after endothelin-1-induced middle cerebral artery occlusion	787
F. Plaisant, M.-A. Dommergues, M. Spedding, R. Cecchelli, J. Brillault, G. Kato, C. Muñoz, P. Gressens	Neuroprotective properties of tianeptine: interactions with cytokines	801
E. Matute, J.A. Lopez-Garcia	Characterisation of sevoflurane effects on spinal somato-motor nociceptive and non-nociceptive transmission in neonatal rat spinal cord: an electrophysiological study in vitro	811
S. Fletcher, S.E.H. Bowden, N.V. Marrion	False interaction of syntaxin 1A with a Ca^{2+}-activated K^+ channel revealed by co-immunoprecipitation and pull-down assays: implications for identification of protein–protein interactions	817
M. Winklhofer, K. Matthias, G. Seifert, M. Stocker, S. Sewing, T. Herget, C. Steinhäuser, S. Saaler-Reinhardt	Analysis of phosphorylation-dependent modulation of Kv1.1 potassium channels	829
G. Maksay, T. Bíró	Erratum to "Dual cooperative allosteric modulation of binding to ionotropic glycine receptors" [Neuropharmacology 43 (2002) 1087–1098]	843

NUMBER 7

Mini-review

J. Harvey, M.L.J. Ashford — Leptin in the CNS: much more than a satiety signal — 845

D. O'Malley, L.J. Shanley, J. Harvey — Insulin inhibits rat hippocampal neurones via activation of ATP-sensitive K^+ and large conductance Ca^{2+}-activated K^+ channels — 855

R. Dickinson, S. Awaiz, M.A. Whittington, W.R. Lieb, N.P. Franks — The effects of general anaesthetics on carbachol-evoked gamma oscillations in the rat hippocampus in vitro — 864

T. Wurch, F.C. Colpaert, P.J. Pauwels — Mutation in a protein kinase C phosphorylation site of the 5-HT_{1A} receptor preferentially attenuates Ca^{2+} responses to partial as opposed to higher-efficacy 5-HT_{1A} agonists — 873

J. Lähdesmäki, J. Sallinen, E. MacDonald, J. Sirviö, M. Scheinin — α_2-Adrenergic drug effects on brain monoamines, locomotion, and body temperature are largely abolished in mice lacking the α_{2A}-adrenoceptor subtype — 882

R. Tordera, Q. Pei, M. Newson, K. Gray, M. Sprakes, T. Sharp — Effect of different 5-HT_{1A} receptor antagonists in combination with paroxetine on expression of the immediate–early gene *Arc* in rat brain — 893

A.L. Coppell, Q. Pei, T.S.C. Zetterström — Bi-phasic change in BDNF gene expression following antidepressant drug treatment — 903

P.J. Mitchell, S.J. Fairhall, A. Fletcher, P.H. Redfern — Effects of single and repeated electroconvulsive shock on the social and agonistic behaviour of resident rats — 911

C.A. Murphy, H. Russig, M.-A. Pezze, B. Ferger, J. Feldon — Amphetamine withdrawal modulates FosB expression in mesolimbic dopaminergic target nuclei: effects of different schedules of administration — 926

K.-R. Shieh — Effects of the cocaine- and amphetamine-regulated transcript peptide on the turnover of central dopaminergic neurons — 940

M. Wang, T.P. Obrenovitch, J. Urenjak — Effects of the nitric oxide donor, DEA/NO on cortical spreading depression — 949

T. Iida, T. Moriyama, K. Kobata, A. Morita, N. Murayama, S. Hashizume, T. Fushiki, S. Yazawa, T. Watanabe, M. Tominaga — TRPV1 activation and induction of nociceptive response by a non-pungent capsaicin-like compound, capsiate — 958

C.-C. Huang, K.-S. Hsu — Reexamination of the role of hyperpolarization-activated cation channels in short- and long-term plasticity at hippocampal mossy fiber synapses — 968

NUMBER 8

M.O. Urban, A.T. Hama, M. Bradbury, J. Anderson, M.A. Varney, L. Bristow — Role of metabotropic glutamate receptor subtype 5 (mGluR5) in the maintenance of cold hypersensitivity following a peripheral mononeuropathy in the rat — 983

G. Maksay, S.A. Thompson, K.A. Wafford — The pharmacology of spontaneously open $\alpha_1\beta_3\varepsilon$; $GABA_A$ receptor–ionophores — 994

A.J. Boileau, T. Li, C. Benkwitz, C. Czajkowski, R.A. Pearce — Effects of γ2S subunit incorporation on $GABA_A$ receptor macroscopic kinetics — 1003

F. Bai, M. Bergeron, D.L. Nelson — Chronic AMPA receptor potentiator (LY451646) treatment increases cell proliferation in adult rat hippocampus — 1013

S. Katsurabayashi, H. Kubota, N. Tokutomi, N. Akaike — A distinct distribution of functional presynaptic 5-HT receptor subtypes on GABAergic nerve terminals projecting to single hippocampal CA1 pyramidal neurons — 1022

M.R. Guscott, E. Egan, G.P. Cook, J.A. Stanton, M.S. Beer, T.W. Rosahl, S. Hartmann, J. Kulagowski, G. McAllister, K.C.F. Fone, P.H. Hutson — The hypothermic effect of 5-CT in mice is mediated through the 5-HT_7 receptor — 1031

S. Patel, K.L. Chapman, D. Marston, P.H. Hutson, C.I. Ragan — Pharmacological and functional characterisation of dopamine D4 receptors in the rat retina — 1038

F. Chaperon, M.D. Tricklebank, L. Unger, H.C. Neijt — Evidence for regulation of body temperature in rats by dopamine D_2 receptor and possible influence of D_1 but not D_3 and D_4 receptors — 1047

B. Hahn, C.G.V. Sharples, S. Wonnacott, M. Shoaib, I.P. Stolerman — Attentional effects of nicotinic agonists in rats — 1054

S. Narkilahti, J. Nissinen, A. Pitkänen — Administration of caspase 3 inhibitor during and after status epilepticus in rat: effect on neuronal damage and epileptogenesis — 1068

A. Fischer, F. Sananbenesi, C. Schrick, J. Spiess, J. Radulovic — Regulation of contextual fear conditioning by baseline and inducible septo-hippocampal cyclin-dependent kinase 5 — 1089

P.S. Naidu, A. Singh, S.K. Kulkarni — Quercetin, a bioflavonoid, attenuates haloperidol-induced orofacial dyskinesia — 1100

R.B. Campenot, J. Soin, M. Blacker, K. Lund, H. Eng, B.L. MacInnis — Block of slow axonal transport and axonal growth by brefeldin A in compartmented cultures of rat sympathetic neurons — 1107